

# A MODEL FIRE/EMS AND EMERGENCY MANAGEMENT SYSTEM FOR LOUDOUN COUNTY, VIRGINIA

## TASK THREE: BENCHMARKING



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# 1. EXECUTIVE SUMMARY

Loudoun County is the third fastest growing county in the United States. This presents unique challenges to systems planners, especially since most of the growth is occurring in the eastern portions of the County, leaving the western portions pristine, historically significant and predominantly rural. Although the rapid growth of Loudoun County is projected to steadily migrate to western portions of the County over the next few years, that migration has just begun. Thus, while western Loudoun County is still very rural, it is changing rapidly. This rural nature limits the availability of financial and human resources to meet increased demand for many types of services, including emergency services. Additionally, changes in expectation for services and a decrease in volunteerism have placed more stress on the current emergency response systems.

The Loudoun County Board of Supervisors, recognizing the rapidly changing environment issued a request for services to hire a consultant to develop a model Fire/EMS and Emergency Management Plan for Loudoun County. The EMSSTAR Group, LLC (EMSSTAR) was awarded this contract on October 27, 2000. EMSSTAR completed Task One: The Model, on May 6, 2001. After many public meeting to discuss the Model, and after several meetings of the Finance and Government Service Subcommittee of the Loudoun County Board of Supervisors, the Board voted to continue the project until all tasks were completed. The remaining tasks are, Develop Service Levels, Benchmark The County System, and Develop an Implementation Plan. Following completion of these tasks, the Board will reconvene and determine whether it will adopt the Model, Service Levels, and Benchmarking for implementation throughout the County. If the Model is adopted, the final task will be to develop a Service Plan.

In developing the model, EMSSTAR utilized over 20 assumptions based on data, interviews, history and tradition, system demands, growth predictions and various other indicators. Once the Model had been developed, Task Two was to develop three service levels, high, average and minimum, for consideration for each of the seventeen attributes of the Model. Additionally, EMSSTAR recommended a service level that it believes to be appropriate for the County for each of the seventeen attributes. EMSSTAR recognize that the cost implications of a high service level may be beyond current fiscal capabilities. EMSSTAR has therefore used a phased in approach to several recommended service levels giving the County the ability to fiscally plan for full implementation of the recommended service level within an appropriate time frame.

**The third task assigned was to benchmark the current Countywide system against the attributes developed in Task One: The Model. There are several benchmarks for system performance including those developed by the National Highway Traffic Safety Administration and others. However, the contract specified that the system be benchmarked against the attributes of the Model. The reader should understand that this benchmarking process does not rank nor compare the Loudoun County System against other county systems such as Fairfax, Prince George, etc. Nor does this benchmarking process rank or compare the volunteer and career agencies within the County. Clearly individual companies may be above or below a certain benchmark as an individual organization. However, as required by the contract, this benchmarking process specifically measures the Countywide (not individual company) services against the seventeen attributes of the Model. This**

**method allows the Board of Supervisors to review the average level of services provided to the entire County population.**

This document represents task three of the contract. It is a companion document to *Task One: The Model* and is used in conjunction with that document. In this document however, for ease of understanding, the attributes of the model are repeated.

## 2. BENCHMARKING

### 2.1. THE PROCESS

EMSSTAR used the expert panel approach to problem solving in developing the benchmarking report. To provide continuity and a greater depth of understanding the Loudoun County system, the same team of national experts that developed *Task One: The Model*, and *Task Two: Service Levels* was utilized to develop the benchmark. Once the Model had been developed, and as required by the contract The EMSSTAR Group benchmarked the current Countywide system using the seventeen attributes of the Model as the benchmarks. Each of the attributes is divided into several sub attributes, which provides more specificity for each attribute.

The EMSSTAR Group used several methods for gathering data for this report. The team traveled to Loudoun County in May 2001, and conducted five days of interviews with system participants. In addition the team reviewed written documentation provided by the Department and other County Government Agencies. The team reviewed information from such organizations as the National Fire Protection Association, Commission of Fire Accreditation International, American Water Works Association, the National Association of EMS Physicians, the American College of Emergency Physicians, American College of Surgeons Committee on Trauma, and others. National documents such as the "*The EMS Agenda for the Future*" were reviewed. A number of public meetings were attended to seek input from system participants. The team also drew from personal experience as current practitioners and their involvement with various national organizations and initiatives. Team members have been engaged in electronic and telephonic communications with various County officials for clarifications on information provided or to obtain additional information.

Finally, the team reviewed the County's ability to systematically deliver fire, EMS and emergency management services to the entire County, in an integrated, organized and comprehensive manner and compared that to the seventeen attributes in the model.

Each of the following benchmarked attributes corresponds numerically 1-17 to the Attribute found in the *Task One: The Model* Document, and is replicated in this document.

## 2.1.1. REGULATION AND POLICY

- ◆ To provide Fire/EMS and Emergency Management services in Loudoun County, the Loudoun County Fire and Rescue Department (the Department) will be formally established. The Department will consist of all existing volunteer fire and rescue companies and all career personnel.

**The Board of Supervisors has funded an entity within its budget that is referred to as the Loudoun County Department of Fire and Rescue Services. All paid (career) personnel are employees of the Department. The volunteers are affiliated with their respective community based fire or rescue agency. Volunteers enjoy workman's compensation insurance, a tax subsidy for personal vehicles, and eligibility for a monthly retirement annuity. The existing seventeen volunteer fire/rescue organizations are not subordinate to the Department**

- ◆ The Loudoun County Administrator will appoint a Chief of Fire and Rescue (the Chief) who will have overall authority and responsibility for the provision of Fire, EMS and Emergency Management services. The Chief's authority will be extended to all managerial and operational aspects of volunteer and career services in the County. Organizationally, the Chief will report to the County Administrator.

**The Chief of the Department holds the title of "Assistant County Administrator." His authority as it relates to oversight and direction of all components of the system is unclear, with the exception of duties common to other County officials such as career personnel supervision and budget management. The Chief has no ability to affect managerial, operational, and emergency response characteristics of the seventeen volunteer fire/rescue organizations in the County.**

- ◆ The Board of Supervisors will appoint an advisory commission that will be known as the Fire, Rescue and Emergency Services Advisory Commission. It will be comprised of at least one citizen, one volunteer fire chief, one volunteer rescue chief, the system medical director, and the Chief, Loudoun County Fire and Rescue, who will be a non-voting. This Commission will advise the Chief in the operation of the Department and the development and implementation of policies that impact the entire County. The Commission will be given the same status and support as other advisory commissions within the County.

**Currently, a Fire & Rescue Commission exists, but it does not serve to advise the Chief. Where it sets policy, accountability for implementation or enforcement is not clear. Several aspects of the current Commission's performance are less than ideal, including an inability to effect policy and operational performance of individual agencies, the conduct of peer review on selected EMS responses without a pledge of confidentiality or immunity, and a lack of utilization of the Commission as a conduit for fund distribution or assuring compliance with regional and state level initiatives or requirements.**

- ◆ The Department will apply for and acquire a single EMS License from the State Office of EMS that is representative of the unified and collaborative efforts of the County.

**Currently, 12 agencies that provide emergency response services each hold separate licenses as EMS agencies with the Commonwealth of Virginia. To some degree, the Department has engaged administrative determinations or approvals on behalf of all agencies within the County, as in the case of exemptions or documentation of the existence of the County EMS medical director. As separately licensed organizations, significant redundancy in administrative and regulatory-related workloads are incurred, both for the individual agencies and more so for the regional and state EMS offices. Strategic decision-making on behalf of the County system when applying for grants or other assets through the region or state is not possible.**

- ◆ The County Administrator will hire and appoint a County EMS Medical Director to provide operational medical control and oversight for all EMS services in Loudoun County.

**The current process for designating a Loudoun County EMS OMD is unclear. There is speculation about the need to select a new EMS OMD within the next few years, regardless of any other EMS system changes that might be made. There are many potential stakeholders in such an endeavor, and it is not apparent that their respective roles have been delineated or who retains the ultimate authority and responsibility of designating a County-wide EMS OMD.**

## 2.1.2. RESOURCE MANAGEMENT

- ◆ The Department will create and maintain a centralized inventory of all fire, EMS and emergency management equipment, vehicles (other than personal vehicles) and personnel resources involved in emergency and non-emergency response to fire, EMS and emergency management incidents.

**Loudoun County presently has at least partial information on equipment, vehicles, and personnel involved in its fire, EMS, and emergency management response. The information is not held in a comprehensive centralized inventory database. Some of the known information has been gathered one time for a specific purpose and is not centrally maintained for ongoing management of the system.**

**Good information exists and is centrally known about basic resources such as station location, the number and type of emergency vehicles and the number of personnel in the system. More detailed information about the condition of stations, the repair and maintenance history of vehicles, the number and location of mobile and portable radios, the status and availability of specific personnel is less available. Some information that the County would want to include in a comprehensive inventory (e.g. the number,**



location, and capability of private ambulances) has not been formally gathered at the County level.

In the current system, the various departments operate with a significant degree of autonomy. Much of the information needed to form a comprehensive resource inventory is known or at least available at the local department level. Challenges for the County in developing a resource inventory will include the creation of standard data definitions, assuring that all resources in the system have been accurately accounted for initially, and developing a mechanism to maintain the inventory over time.

- ◆ Based on performance standards, the Chief will develop and maintain a centralized resource management plan that addresses needs assessment, planning, acquisition, utilization, deployment, maintenance, etc. for facilities, vehicles, equipment, and personnel.

Presently, the County has few formally established performance standards that can be used as a basis for determining if it has the necessary resources deployed in an efficient manner to assure that the population actually receives the response specified by the County.

During the past several years, the County has been faced with unplanned expenditures for Fire and Rescue personnel to supplement volunteers. The current “trigger” for when the County will supply paid personnel is a request from the local department for assistance. The current lack of a resource management plan leaves the County in a “reaction” mode rather than supporting the prospective identification of needs and long term planning.

- ◆ A water supply program will be in place to assure continuity of fire flow for all areas of the County.

The ability to supply water for fire suppression needs varies significantly by location throughout the County. Not all areas have water supply hydrants. The ability to supply water is generally more secure and well known in the more populated communities. As the population of the County continues to grow, planning and implementation of a water supply program needs to be part of the development of the County infrastructure. In the rural areas, there is a need to document the location of water supplies and assure that an adequate supply of water can be delivered to all locations within a pre-determined performance specifications.

### 2.1.3. HUMAN RESOURCES

- ◆ The system will continue to use a combination of volunteer and career personnel to deliver fire and EMS services.



The current system utilizes a mix of career and volunteer personnel delivering a variety of public safety services including fire and EMS emergency responses. The mix of career to volunteer has changed for a variety of reasons including the nature of the County population, a general demise of volunteerism documented in a broad spectrum throughout the US, and a migration of work away from where people live to other places that are within commuting range. However, a committed and dedicated core of volunteers remains active throughout the County with a great range of coverage vis-à-vis emergency response. County government and elected officials have made a commitment to the continued use of volunteer personnel to staff the majority of fire and rescue units. These units are augmented with career staffing for companies that need assistance meeting response criteria or who otherwise might need staffing assistance. The challenge for the Department is not whether to maintain volunteer agencies but the appropriate usage and support for all fire and emergency services to ensure delivery of qualified services to the citizens and visitors of the County.

Decisions regarding discipline and personnel actions appear decentralized and inconsistent in application. Some of this seems to be the result of the geographic dispersal of personnel throughout the County. Other issues however, are raised by the application of differing rules and personnel expectations in different stations. Some of this is part of the conflicting control issue with much authority divested from the Department to the individual independent fire and rescue companies. For instance, by mutual agreement in the MOU for stationing career firefighters in a volunteer station, the fire chief of the independent fire company must be consulted prior to discipline being administered for transgression of agency rules. This can lead to inconsistent outcomes.

- ◆ The recruitment, retention, including incentives, and development of volunteers will have a higher priority.

There is no standardization within the County regarding selection, development, and retention of volunteer members although several of the independent fire and rescue companies have developed singular and sometimes similar policies regarding these matters. Some of the independent companies have great success in recruiting and retaining members while others have some difficulty in routinely meeting staffing/response standards. There is great disparity within the County among agencies that have an overabundance of candidates and those that struggle to maintain their membership. Current retention incentives do not seem to be primary motivators for development of the volunteer force.

Decisions regarding discipline and personnel actions appear decentralized and inconsistent in application. Some of this seems to be the result of the geographic dispersal of personnel throughout much of the County. Other issues however, are raised by the application of differing rules and personnel expectations in different

fire stations. Some of this is part of the conflicting control issue with much authority divested from the Department to the individual independent fire and rescue companies. For instance, by mutual agreement in the MOU for stationing career firefighters in a volunteer station, the fire chief of the independent fire company must be consulted prior to discipline being administered for transgression of agency rules. This can lead to inconsistent outcomes.

The Department HR staff does not appear to be involved in any direct manner with the HR issues of the independent volunteer agencies. None of the selection, promotion, or retention activities target the volunteer agencies. Many of the policies regarding volunteers are generated by the Fire and EMS Councils. While this is an attempt at standardizing many processes among the independent fire companies as well as within the Department, it is perceived as slow and ineffective. Communication from the Councils is often reported as “to slow to make a difference” to the many chiefs, presidents, and company officers. The volunteers also bring a wide variety of strong and needed skills to the County. No attempt to catalog these or to use them outside their independent agency was presented. There is no costing or other accounting for volunteer firefighters and rescue personnel. There are direct and indirect costs associated with managing and coordinating volunteer programs. Much of this cost is borne by the independent fire companies (uniforms, insurance, etc.) while other costs are passed on to the County (training, documentation, etc.) yet no one could provide the team with the specific cost of what a volunteer costs the County each year.

- ◆ Job descriptions, titles, and qualifications will be developed that are consistent between volunteer and career personnel.

The promotion system with the County independent volunteer fire and rescue companies varies between agencies. Officers are elected and may not always be technically qualified to execute the operational portion of their tactical assignments. There is no system adopted by all the volunteer agencies, the Fire and EMS Councils, or the Department that ensure the technical competence of responding officers to emergency scenes. Thus there is no uniform or consistent qualification among tactical or operations officers. Along these same lines, there is little evidence in either the career or volunteer fire agencies that any succession planning or preparation is being done.

- ◆ A standard chain of command will be established for all aspects of departmental operations.

The Loudoun County fire protection system consists of an umbrella career agency, the Fire and Rescue Department and several independent volunteer agencies. Both career and volunteer personnel bring a strong sense of commitment and service to their community or the County services. The County Fire and Rescue and

independent companies provide coverage through a mixture of staffing, using mixed career and volunteers or all volunteers during the work day with volunteers responding after hours and on weekends. Elected chief officers in the independent companies retain their autonomous authority in almost all dealings with the County. While the issue of local control is best left to the elected policy makers of the County, the issues of day-to-day operating authority, strategic management control, and operational tactical control of operations needs to be addressed. The title of "Chief" seems critical to each chief of the independent fire companies. .

- ◆ Within the career service, personnel classifications will be established such that ranks are equivalent and allow for the lateral transfer between department divisions at the direction of the Chief.

Within the career fire and rescue services there is portability and general equivalency at the operational level. However specialist and staff personnel are faced with unclear career paths and opportunities. In some positions there is little chance for promotion and little ability to move to other parts of the agency. The County would be better served with a system that utilizes the best talents and fully develops the potential of all fire/rescue personnel regardless of current assignments. Where possible, personnel should rotate into and out of training, prevention, operations, administration, support services, and logistics on a regular, fair, and equitable basis. Senior officers should be selected for top departmental positions based on experience and success in a variety of rotations beyond field operations. Persons opting out of the full career development rotations should have limited opportunities for senior staff promotions.

Management should address the competition for openings for external as well as internal candidates. This offers the County an opportunity to maintain a dynamic organization in theory, but in fact is resented by County personnel who have provided loyal service to the County. The net worth of the policy is suspect and is likely to cause disjointed operations until the successful external candidates are "normalized and socialized" within the system. The goal of "growing" more minority managers is laudable but may be better addressed with entry level and top staff recruiting rather than targeting mid-level slots.

Another integration issue for officers must be the interface between career and volunteer officers within the County system. Within the Department there is established a series of ranks and positions reflective of common terminology but effectively sub-divided among the individual independent fire agencies and often mixed with some career firefighters and supervisors in a variety of roles. A captain from independent agency "A" may be more qualified than the career captain at location "B". The better qualified captain from "A" may also be better qualified than the Captain from independent agency "C". Yet the cultures of the career department members suggests that by the nature of their being career firefighters that some technical superiority vests with the title. Also there may be some

question between the two volunteer captains about who is in charge at a particular incident.

- ◆ Sufficient human resources will be available to meet the performance standards of the Department.

Response standards are varied across the County. In the eastern side it is likely that a fire or medical emergency call will generate several firefighters on multiple units. The east side response is likely to get out of the station in a timely manner and sufficient units arrive on-scene to execute the operations necessary to properly and safely mitigate the incident. In the western side of the County this situation is less likely to occur. Volunteer or mixed response is less likely to provide adequate staffing to ensure deployment of appropriate and adequate assets to quell the emergency. Aggregating enough staffing to deal with a structural fire (the commonly accepted benchmark for fire service delivery) in much of the western end of the County will almost always require dispatch of large numbers of companies, some an extremely long distance from the incident. This causes delays in fire fighting activities and a much-increased risk of accidents during response to these calls. Both these result in greater loss to the citizenry and increased risks to fire and rescue personnel. The County should ensure a reasonable minimum standard for deployment and response that will provide empirical evidence to the citizens as to the priority for fire and EMS services.

## 2.1.4. FINANCE

- ◆ There will be accountability for all funds to provide Fire, EMS and emergency management in Loudoun County.

During the last ten years, the County has been faced with increased responsibility to provide emergency services, however, as a result of the current delivery system, no single department or the County assumes full accountability for all necessary funds to operate Fire, EMS and emergency management. Based on EMSSTAR interviews, the general public perception is that the County is ultimately responsible for the provision of these services. The County's role, through predominately a default mechanism, supports the volunteers when they are unable to fulfill their obligation of providing service. This is most noticeable by the increasing demand for the County to provide staffing, especially during the hours of 6 AM to 6 PM. In FY 2001 the County employed 178 people in the Department of Fire and Rescue Services. Budgeted expenditures during the current fiscal year include:

Fire and Rescue Field Services:	\$6,126,536
Volunteer Coordination and Support:	\$3,946,855
Communication:	\$1,246,943
Fire Training and Planning:	\$1,099,248

**Fire Marshal: \$ 898,043**

In addition to governmental expenditures, individual volunteer agencies also provide funding. While there is no complete estimate on the total level of funding generated by the volunteer companies, the elimination of the proffer system will significantly impact total revenues. A forecast of projected proffer income by the Ashburn Fire Department indicates a potential revenue loss of \$1,012,270 for FY 2001.

In the current system, each fire and rescue department oversees its own financial affairs. This includes managing their own set of financial books, revenue generation, collection, cost controls and management and operation and capital expenditures. Subsequently, there is great variation in the level of sophistication related to financial management and forecasting future requirements. In the past, even with the lack of sophisticated systems, the departments have generally met the requirements of their customers. However with the growing population (17,000 new residents per year) and growing demand for service the potential for significant financial problems exist. Left unattended, this translates into a significant risk of not having the financial resources to provide the services required in the future.

- ◆ Uniform accounting procedures will be established for all organizations in the Department.

The various Loudoun County departments that provide for the Fire, EMS and emergency management system have not adopted nor do they follow uniform accounting procedures. While the County provides funds for the volunteers, there are no formal contractual agreements that stipulate uniform accounting procedures. In most businesses, it is customary to have an annual financial audit by an independent outside firm. The County's books are audited in that manner. Conversely, many of the volunteer departments have never had any external audit of their books. Consequently, we are unable to adequately access any uniformity in their accounting practices.

- ◆ The Department will provide staff support to assist volunteer fire and EMS companies in matters related to financial accounting.

The County's finance department currently offers its support to the fire and EMS companies. Unfortunately, this service is not often used. It appears that the lack of trust between the County and the Volunteer services lies at the bedrock of this issue. In addition, because the volunteers have managed their own affairs in the past, they may not understand the benefits of getting professional assistance in matters related to financial accounting.

- ◆ The County will assume financial responsibility for operational and capital expenses for the system.

**Currently, the County does not assume all financial responsibilities for operational and capital expenses for the system. In fact, most of the capital expenses including equipment, land and buildings have**

historically been the financial responsibility of the independent volunteer departments. Both short and long term capital facilities financing instruments exist within several of the volunteer agencies. The County has assumed the responsibility for the communication infrastructure.

- ◆ There will be a tax district(s) in the County to create revenue to fund the operation and capital budgets of the Department.

Currently, a special tax district for fire and emergency services does not exist. Revenues to support the Fire and Rescue Services are funded through the County's General Fund. In addition the elimination of the proffer system (considered by some as a special taxing district) will significantly alter the revenue sources from which to support the service demands.

- ◆ The County will consider all possible revenue sources to support a County system.

This is a statement of the future. Currently, the County is becoming increasingly involved with the provision of these services. The County has not focused its attention on the revenue side of the equation as the Volunteer departments have provided adequate resources to date and the increasing County population has generated new revenue streams. Instead, the County has become involved with these services out of necessity to assist with daytime staffing and support services.

With it's eye of the future, the County must become much more knowledgeable about the revenue side of the equation of providing these services to assure it is providing the best value for the customer. Approximately 10% of revenues supporting the Fire and Rescue Services Program are generated through user fees, state and federal programs. The balance of program revenues are budgeted from the General Operating Fund.

## 2.1.5. MEDICAL DIRECTION

- ◆ There will be at least a 0.5 Full Time Equivalent (FTE) County Medical Director.

The current operational medical director (OMD) for emergency medical services (EMS) in Loudoun County serves in a volunteer capacity. While his commitment to the system and the County has been laudable, lack of funding for the OMD position causes limitations in his availability to address the contemporaneous needs of the system.

- ◆ The County Administrator will select the Medical Director.

The current process for designating a Loudoun County EMS OMD is unclear. There is no clear procedure for recruiting and selecting an EMS OMD There are many potential stakeholders in such an endeavor, and it is not apparent that their respective roles have been



**delineated or who retains the ultimate authority and responsibility of designating a County-wide EMS OMD.**

- ◆ The Medical Director will report primarily to the Chief and secondarily to the County Administrator.

**Currently, the EMS OMD serves primarily as a volunteer in an advisory capacity to Loudoun County Fire and Rescue. While relationships amongst the OMD and administrative staff members are collaborative overall, lines of authority and responsibility and reporting structure are not clear.**

- ◆ The Medical Director will meet the minimal qualifications as described in standards by The National Association of EMS Physicians.

**The National Association of EMS Physicians (NAEMSP) developed guidelines for EMS medical directors (Physician Medical Directors in EMS), including their qualifications, in 1997. The current EMS OMD is appropriately qualified as recommended by NAEMSP. He has a long-standing history of community service through his diligent work with the volunteer EMS agencies in Loudoun County and maintains an intricate working knowledge of the Loudoun County EMS system.**

- ◆ The Medical Director job description will be consistent with that described by National Association of EMS Physicians.

**As in all states in the United States, the Commonwealth of Virginia stipulates what levels of EMS agencies and providers must maintain an active relationship with a medical director, and what his/her responsibilities as part of that relationship are. In as much as the volunteer EMS agencies in Loudoun County are each independent entities, the relationship with the OMD is actually between the physician and each of these agencies. Currently, all of the EMS agencies in the County voluntarily maintain an OMD relationship with the same physician. However, there is no formal agreement to do so, and the possibility exists for fragmentation of medical direction throughout the County's system.**

**In its 1997 paper, Physician Medical Directors in EMS, the NAESMP established guidelines for the sorts of duties, responsibilities, and authorities that should be included as part of the expectations (job description) of an EMS medical director. These included roles in EMS provider field clinical practice, EMS communications, physician in-field clinical activities, personnel education, system evaluation, administration, finance, public educations, public health, prevention, and liaison with other healthcare entities. Currently, Loudoun County has no job description or other type of formal arrangement for the OMD of the County's EMS agencies.**

- ◆ The Medical Director, in conjunction with the Chief of Fire and Rescue, will have the responsibility and authority for all clinical aspects of the EMS system including scope of service, clinical protocols and procedures, quality



improvement matters of EMS personnel performance and resource development.

**Currently, the EMS OMD serves predominantly in an advisory capacity at the County level. The EMS OMD provides some degree of guidance with regard to scope of service and protocol development. However, various committees of the Fire and Rescue Commission maintain vested stakes in these sorts of issues. It is not clear that the OMD possesses the appropriate authority, or has been delegated the responsibility, to determine to what extent the EMS providers in Loudoun County will practice prehospital medicine and ensure the quality of the system.**

- ◆ The Medical Director will be provided with an appropriately equipped vehicle to respond to critical EMS and fire scenes.

**The EMS OMD does not have the ability, by virtue of an appropriately equipped vehicle, to respond directly to the scene of critical incidents in Loudoun County.**

- ◆ The Medical director will oversee the process of direct “on line” medical command.

**The current EMS OMD is a practicing emergency physician at Loudoun Hospital Center. His presence there allows some oversight of the process of direct “on-line” medical command, communication between EMS field providers and a physician for the purpose of guiding prehospital patient care. There is little effort devoted to monitoring the quality of current processes. It is not clear what authority the OMD has to ensure the quality of service, including credentialing appropriate emergency department staff, monitoring protocol adherence, and implementing steps for improvement.**

## 2.1.6. MEDICAL FACILITIES

- ◆ The County, in conjunction with local health care facilities and appropriate planning groups, will ensure that there are sufficient medical facilities available to meet the current and projected needs of its’ citizens.

**There is one medical facility within the County, which has a capacity of 80 beds. An application for additional beds has recently been denied. The hospital lost \$20,000,000 in the prior fiscal year. The Emergency Department's volume is approximately 30,000 visits per year with an admission ratio of 13%. This is equivalent to the U.S. national average. The Emergency Department is frequently on “reroute status” because too many admitted patients are present in the E.D. bays waiting for hospital beds to become available. The reroute/divert status of the local institution often means that responding ambulance companies and rescue squads must transport patients to other facilities outside the County.**

Hospital admissions in the United States in 1999 were approximately 113 per year per 1,000 residents which represents a decreasing trend from over 120 in 1992. (American Hospital Association) The length of stay in the hospital facility in Loudoun County was 6.0 days at the time of the onsite interviews. This is comparable to national norms. Even surmising that there are some specialized patients—such as burn and spinal cord injuries, who will obtain their care at specialized centers within the metropolitan Washington, D.C. area, Loudoun County has a significant shortage of available hospital beds. There are reports from the United Kingdom where both experience and mathematical modeling of hospital occupancy, of which some come from the unpredictable arrivals of admissions from the Emergency Department, indicate that hospital occupancy levels of above 85% will be associated with a bed occupancy crisis. A key decision for both the County and the local hospital facility is whether the additional hospital beds to meet the needs of the citizens should be located at the existing institution or at some other site. An alternative site towards the west of the County would allow shorter transport times for many rescue squads. However, many efficiencies of a single large physical plant would not be realized. Ideally, additional hospital beds would be added within the County to meet population-based estimates of hospitalization, such that occupancy rates of 85% are routinely achieved. This will allow additional capability in times of local disaster, such as an event at Dulles Airport or a regional epidemic such as the flu.

- ◆ Current and projected needs will include analysis of special populations such as the elderly, the young and such specialized needs as major burns, multiple traumas (both adult and pediatric) and other patient subsets.

EMS personnel encounter major trauma in approximately one out of every 1,250 ambulance runs. At the time of the site visit, no trauma facilities exist within the County. Rather, severe trauma is transferred to a Level I Trauma Center in Fairfax, or to the Washington, D.C. hospitals. Major burns and pediatric trauma are also evacuated out of the County. As projections of needs of the County are made, consideration should be given to upgrading of the local facility to a Level III Trauma Center. While a Level II Trauma Center includes capabilities such as ophthalmic surgery and thoracic surgery, qualifications for a Level III Trauma Center are less onerous and may be more appropriate at this time. The hospital could enter into an affiliation agreement with a larger regional center and could encompass contractual arrangements for physician coverage to help address staffing requirements to meet this level of trauma center designation.

- ◆ The County Medical Director, in conjunction with the medical community in the County, as appropriate, will develop and implement pre-hospital management and destination protocols.

Some of the individual rescue squads have sophisticated pre-hospital management protocols. However, these do not appear to be common across the County nor do they include destination

**protocols that are implemented and monitored on a Countywide basis.**

- ◆ Standard operating procedures will be developed, implemented and disseminated for the conditions of emergency department bypass, intensive care unit bypass and other conditions that effect EMS destination. Methodology for the timely on-line communication of such conditions and procedures for EMS units under these conditions will be developed and implemented.

**The local facility is experiencing significant ambulance reroute. There is no established mechanism for notifying all ambulance and rescue squads within the County of which facilities were on ambulance reroute in an efficient manner. However there has recently been implemented an electronic “status” notification system among regional hospital. Loudoun Hospital Center does participate in that system. This system is not linked to any prehospital notification system.**

### 2.1.7. TRAUMA SYSTEM

- ◆ The Department will develop, implement and maintain policies and procedures related to the pre-hospital management of trauma victims of varying severity.

**Pre-hospital policies and procedures related to the pre-hospital management of patients reside at the local level of rescue squad and/or ambulance company. Pre-hospital management capabilities are governed by the level of certification of pre-hospital personnel; however, there is no Countywide standard or uniformity.**

- ◆ The Department will maintain ongoing affiliations with the regional resource center to facilitate effective care of its patients. Such an affiliation agreement will address issues such as quality improvement, continuing education and Countywide preventive initiatives.

**Such an affiliation agreement will address issues such as quality improvement; continuing education; and Countywide preventive initiatives. At this time, there is no organized mechanism by which patient’s outcome and pre-hospital quality improvement projects can be implemented on a Countywide basis. Continuing education of pre-hospital personnel is performed on a service-by-service basis. There are no Countywide preventive activities driven by data developed in the County.**

- ◆ The Department will maintain transportation plans regarding the evacuation of trauma victims to appropriate facilities under various conditions of locale, weather, traffic, patient numbers and clinical situations.

**There are no Countywide transportation plans regarding the evacuation of trauma victims. However, some local plans, such as that for Dulles Airport, have been developed.**

- ◆ The Department as part of its information system will maintain a registry of trauma cases within Loudoun County.

**The Department does not have a Countywide trauma registry to collect trauma data.**

- ◆ The Department as part of its public education efforts will maintain on going initiatives related to injury prevention within its own system and within the community.

**There are community wide injury prevention efforts. Some of the efforts are found in the school system and through the local healthcare facility. (See PI&E)**

- ◆ The Department will conduct periodic staff education related to trauma care.

**There are educational opportunities available in the metropolitan D.C. area related to trauma care. Individual pre-hospital hospital providers are able to attend such educational endeavors. However, the Department has not developed a leadership role in this arena.**

- ◆ The Department will advocate for responsible public action, ordinances, laws and other initiatives directed toward reducing trauma related morbidity and mortality in Loudoun County.

**Without a clear Countywide registry of trauma mortality and morbidity, it is difficult for the Department to direct specific public action and ordinances to reduce trauma-related mortality and morbidity. Efforts by the Department have been more generic rather than specific.**

## 2.1.8. COMMUNICATIONS

- ◆ A functional communication system is essential for effective Fire/EMS/EM operations. The system will have the capability to optimize the balance between response time reliability and efficient use of resources. It will support communications between all system stakeholders and provide Countywide coverage. It will have redundant capabilities and the capacity to handle peak demand and disaster responses.

**The existing communications system is based on technology that is 30 years old and is fraught with difficulty. The system does not embrace all communication stakeholders. Public Works, Highways, Animal Control, etc. are found on a variety of separate systems. Leesburg Police work on a separate, independent radio system. In times of high demand, the limited number of channels becomes clogged with voice traffic.**

**The County is well along in the process to replace its existing system with a new, Countywide digital 800 MHz radio system. This will greatly enhance the functionality of the public safety**

**communications system for all users (Fire & Rescue, Sheriff, and ancillary users).**

- ◆ Field staff and telecommunicators will be trained to use the system efficiently. Dispatch personnel will additionally be trained in emergency medical dispatch, pre- arrival instructions, customer service and medical referral procedures.

**Discussions suggest that telecommunicators and field staff use the tools provided to them effectively. Emergency Medical Dispatch (EMD), including pre-arrival instructions, are routinely provided. 4-5 communications personnel are trained in EMD, but EMD is not implemented systematically. There is not always an EMD –trained person on every shift, and that person may not be assigned to EMD duties. The center uses MPDS cards, not the computerized MPDS protocols (ProQA®).**

- ◆ The system will be ergonomically friendly.

**The dispatch workstations currently in use are not of modern ergonomic design. The dispatch center is undergoing renovation and plans include ergonomic keyboards, chairs, and work stations.**

- ◆ The system will provide private and secure communications.

**The existing radio system does not provide private and secure communications. Radio traffic can be monitored by anyone with a commercially – available scanner radio.**

**The County is well along in the process to replace its existing system with a new, Countywide digital 800 mHz radio system. This will greatly enhance communications security.**

- ◆ The system will support information management and data collection.

**The existing GEAC CAD will support data collection and information if the appropriate interfaces are built to a comprehensive records management and reporting system. Efforts currently underway to integrate the GIS System with the CAD System should help to support a comprehensive information and data collection system.**

**The current practice of using the CAD in lieu of a records management and reporting system is ineffective and likely to result in faulty input to the management process of the Division of Fire & Rescue.**

- ◆ The Communication Center will be a complete medical resource facility. Medical information and care will begin at the time of the call. A host of services will be provided that are beyond the traditional role of responding emergency personnel (e.g. centralized domicile CO detector services, follow-up on non-transported responses).

**The Communication Center provides basic call-taking, dispatch. Pre-arrival instruction services are provided on all cases requiring them. The Communications Center does not perform extensive or valid quality assurance of its service delivery.**

- ◆ The communication system will take full advantage of evolving technologies (e.g. GPS, CAD and satellite communications).

**The communication system does not take significant advantage of evolving technologies. There is no use of GPS/AVL (automatic vehicle location) technology. There is limited use of mobile data communications in the Fire & Rescue service.**

## 2.1.9. RESPONSE PERFORMANCE

- ◆ All emergency responses will consist of an appropriate response force composed of staff, vehicles, and equipment.

**Response forces are currently based on station dispatches. Specific units are not dispatched. Personnel determine the appropriate equipment to respond based on company policy. Stations are dispatched without regard for adequate staffing in the station or verifiable personnel to respond to the emergency. There are no minimum requirements for vehicles or personnel to make up adequate response forces. At times, multiple vehicles respond from stations to emergency incidents when adequate staffing is on the scene. Once units are dispatched, they have prescribed time frames to actually respond. Back-up units are not dispatched until the prescribed time frames have expired.**

- ◆ The effective response force will at a minimum meet governing federal, state, and local standards (e.g. VA State EMS, applicable NFPA standards, VA-OSHA, and other applicable industry norms).

**There is no Countywide standard that addresses minimum requirements for vehicle responses or personnel standards. Some stations have enforced standards, but the majority of stations do not adhere to any standard. The standards are different between career and volunteer personnel. There is no consistent officer-training standard that must be met in order to assume command of emergency incidents. There is no requirement that an officer respond to multiple company incidents. All EMS personnel meet minimum state requirements, but at various levels, in order to provide medical care to patients. Effective response forces are not based on equipment capabilities, but on volunteer company inventory – not staffing.**

- ◆ Response performance standards shall be based on community expectations, best practices, and generally accepted industry standards.

**There are response performance standards for some organizations, but no system wide standards or reviews of the data. In most cases, standards are based on popular vote of the organization. No risk assessment has been conducted to determine the risk in the community and to establish response needs. There is no uniform standard of cover that guides the deployment of vehicles, personnel and equipment.**



- ◆ Response times will be computed and reported on a percentile basis.

**Response times are difficult to track and to verify. All of the data is not readily available for analysis and review. The majority of the County organizations evaluate average response times and not percentiles. This gives a skewed view of the reactivity of the response forces. There are no established standards to meet response time goals with set percentage points.**

- ◆ Differential response performance will be prescribed for urbanized and rural areas based on risk assessment.

**There are no response performance standards for the system. No risk assessment has been completed. There are no system wide standards for either urban or rural responses.**

- ◆ Response performance standards will include turnout times.

**Turnout times are not currently being evaluated on a system wide basis. This time can impact the overall response times tremendously. In fact, this is the one time that can be reduced by simply staffing stations with on-duty volunteer or career personnel.**

## 2.1.10. DATA AND EVALUATION

- ◆ There will be a comprehensive and fully integrated records management and reporting system, interfaced to the computer-aided dispatch system, which accurately and reliably records accepted data sets for all operational activities (emergency and non-emergency responses, inspections, and community/educational interventions).

**There is no comprehensive and integrated records management system. There is no CAD interface to any existing operational data base (responses, inspections, education).**

- ◆ The records management system will record all data elements of the most current Virginia State EMS Reporting System, Virginia Fire Incident Reporting System, the Uniform Pre-hospital Data Set, the Health Insurance Portability and Accountability Act (HIPAA), and such other data elements as prescribed by the County Medical Director and the Department.

**There is no comprehensive records management system. Records that are kept do not comply with VFIRS standards, or the Uniform Prehospital Data Set. There has been no formalized discussion or plan to assure compliance with HIPAA.**

- ◆ A comprehensive report will be completed on each incident and reported to a central records system and monthly reports will be provided to all companies.

**Information gathered on incident responses varies from volunteer company to volunteer company. This information is not forwarded to a central repository. Certain information is collected on a Countywide basis (such as some information gathered by Fire**



**Marshal staff). The use of technology is limited. There has been little effort to upgrade in areas as data management practices.**

- ◆ The Department will regularly report system performance against established standards and publish those reports throughout the Department and to the County Administrators, Board of Supervisors and citizens.

**There are no established performance standards for the system.**

- ◆ Data from the records management and reporting system will serve as a prime driver for organizational decision-making.

**There is no County records management and reporting system. County Fire and Rescue staff (Director and career managers) make excellent use of the limited data available to them in attempting to plan and manage a system that is fragmented and resistive to centralized planning and coordination.**

- ◆ There will be a LAN/WAN system that creates a connection between all Fire, EMS and administrative locations.

**All fire, EMS, and Fire & Rescue administration locations are not connected by data networks (LAN/WAN).**

## 2.1.11. FIRE AND EMS OPERATIONS AND TRANSPORT

- ◆ Standard operating procedures will be established for all fireground and medical response activities.

**There are no enforced standard operating procedures for the entire County. The Fire and Rescue Commission adopts policies in a long and sustained process, but individual companies often choose to ignore the policy or procedures. The adoption of policies and procedures may take up to a year to complete. There is no comprehensive manual that addresses the overall needs of the system. Some organizations have policies and procedures specific to their needs, but there is no method to assure that other companies are aware of their practices prior to an emergency response. Standard operating procedures are predicated on specific problem areas and issues and not necessarily in a proactive response to future problems.**

- ◆ A minimum equipment list and positioning of apparatus will be established and implemented at all stations.

**There is no minimum equipment list for the County as a whole. Many organizations have minimum equipment lists for their vehicles, but there is a wide variation between companies. Many of these differences are simply a matter of inadequate funding to smaller companies. Apparatus is positioned throughout the County based on the ability of the volunteer organizations to purchase equipment. There is no master plan for vehicle purchase or deployment. Vehicles are purchased for a specific station and are not moved to**

**other stations, regardless of increased risk or identified need in other areas.**

- ◆ All companies will adhere to minimum staffing levels.

**There are no minimum staffing levels enforced Countywide. Vehicles may respond with as few as one person or up to 10 persons on one vehicle. There are guidelines that have been established but not adhered to by personnel on a system basis.**

- ◆ The second due company will respond with only the number of apparatus required to complete the minimum vehicle assignment requirement.

**Second due companies have varying practices on responding into other districts. Some companies respond one piece to neighboring districts and others will respond every vehicle in their stations. This practice may leave districts unprotected when the company is responding to other locations in the County. There is no system in place to monitor when adequate vehicles or personnel are on scene and to end any further response by other units.**

- ◆ All fire and EMS units will be identified as being staffed when minimum personnel are physically staffing a vehicle. The communications center will track staffed units. When a call is received, the first due company will be dispatched automatically. If the first due company does not have a staffed unit, the closest appropriate staffed unit will be immediately dispatched. This rollover time will be determined based on the well being of citizens, and not on the convenience of responders.

**Units are not monitored for staffing levels. Stations or companies are dispatched without regard of actual personnel being in station or available for response. Communications officers dispatch stations and wait a prescribed time period before dispatching the second due company. A prescribed time period is then given for that company to respond. This process continues until a unit is available to respond to the emergency. The rollover time is currently based on popular vote and not on any standard data point. The time has been increased in the past to give different units additional time to muster a force. This has resulted in a longer delay time should the first due company not muster adequate resources to respond to an emergency.**

- ◆ All personnel will implement and follow a standard incident management system.

**There is not a standard Incident Command System in the County. All command personnel are not required to use ICS or to be trained in the proper use of the system prior to being a command officer. There are different standards in the County as to the response of command officers from other districts and their ability to command incidents outside of their first due company. There is no clear chain of command for career and volunteer interaction.**

- ◆ Units will be dynamically relocated to temporarily equalize response capabilities during times when other units are committed to emergency incidents.

**Units are relocated only upon the request of command officers from the affected companies. There is no set plan for reassigning units to cover empty stations. Different command officers use different criteria to determine which units are relocated to cover empty stations.**

- ◆ An ALS unit and the closest engine will be dispatched on all life threatening incidents at all times.

**Units are not dispatched based on the type of emergency incident. There is no standard to allow for the dispatch of the closest engine with an ALS unit 24 hours per day. Fire units often sit in nearby stations when EMS units travel from a greater distance. The dispatch of fire units to EMS incidents is often based on career personnel being in-station.**

- ◆ A minimum of first responder certification will be required for all fire personnel.

**There is currently no minimum EMS certification for fire personnel.**

- ◆ Incident updates will be provided to the first responding units even if they are not the first due company on the incident.

**Incident updates are currently only given when the first due company is responding. In cases where the second due company is staffed and the first due company is not staffed, information is often not received by responding units. This creates a situation where units may encounter hostile situations when the situation could have been prevented.**

- ◆ All equipment, particularly safety related equipment, will meet all safety standards.

**There are no safety inspections or requirements on a Countywide basis. Companies are responsible for their own equipment maintenance. Some companies do not have the resources to adequately maintain their equipment. There are no standards set for purchase of new equipment. Companies can purchase different brand equipment without regard for compatibility with other County resources.**

- ◆ All personnel will wear appropriate levels of protective equipment while responding to and operating at any emergency incident.

**Companies are responsible for purchasing their own personal protective equipment. There is no standard to assure that equipment meets all applicable standards. There are no enforced policies that require personnel to utilize personal protective equipment. Many departments are very safety conscious, while others have lapses in all areas of personnel protection. There are no**

**written standards for operating at motor vehicle accidents or on EMS incidents.**

- ◆ All personnel, including civilians riding on or in apparatus will be appropriately restrained.

**There are no enforced system policies in place that govern restraint in emergency vehicles.**

## 2.1.12. PUBLIC INFORMATION AND EDUCATION

- ◆ A strong public information program will be in place to inform and educate the citizens of Loudoun County about the Department on an ongoing basis.

**The Department has formally assigned public information duties to a designated individual who is on call 24 hours a day, 7 days a week for interaction with the media about incidents. This position, which answers to the Chief of the Department, is distinct from other public education activities. In addition to media relations, “safety bulletins” are a primary work activity of the Public Information Officer (PIO), targeting issues unique to a particular threat or season, such as flash flooding or heat exposure. The selection of unique topics like the safe utilization of decorative candles is also being pursued to inform the public, indicating creative consideration of hazards in the community. The Public Education Manager (PEM) works under the Deputy Chief of Training & Planning. The PEM and PIO work closely together to hand off activities when they are identified as the other’s responsibility. One of the most visible means of educating the citizens about the Department is a “background” web document found in the portion of the County web site devoted to the Department. Other files there permit the citizen to see detailed response data by month.**

- ◆ Residents will have an accurate understanding of the type of emergency response available to them and the appropriate use of those services.

**The proffer system and bond referenda have forced awareness of the local agencies needs and challenges in the past, especially as the plight of fire/rescue agencies where the loss of proffers and need for funding capital improvements was brought to light. A newsletter is generated monthly by the PEM for optional use by homeowners’ associations, but its focus has been on injury and fire prevention topics, and has not been exploited as an avenue of educating the public about the Department itself. Residents may learn about the Department or a local volunteer company in the course of obtaining a child passenger safety inspection or fundraising activities as a byproduct of the interaction. At volunteer station open houses, a 911 simulator is available from the Department to educate children about its appropriate use. A smoke house and safe house are also loaned to volunteer agencies, the use of which may facilitate awareness of local resources and response through conversations**

with parents and other citizens. While the PEM has obvious appreciation for the value in this attribute, the workload being shouldered by this individual does not permit sufficient time or resources to accomplish this important task. Unless a resident deciphers data from the web site mentioned above, there is no other resource which documents the capabilities or challenges faced by the 1<sup>st</sup> due company in a particular area or the Department as a whole. Unique and valuable resources provided by the Department, such as the close on-site coordination provided by the PIO, PEM, and Emergency Services Coordinator acting as a liaison team between the Department, the family who has experienced a significant fire, and the Red Cross, is likely to be unknown to the citizen until they need or witness the service.

- ◆ Radio and television stations will routinely donate time and resources for Fire and Rescue public service announcements and documentaries.

A local television station has readily donated time for an informational "safety minute." This coverage has been provided as often as weekly, at the Department's discretion. The PIO has not pursued this option aggressively, identifying the difficulty in arranging a new topic on a weekly basis as the reason. Utilization of radio, newspaper, and television has provided a high degree of visibility to the Child Passenger Safety program, with an indicator of success as 50-60 citizens participating in each of four-hour inspection windows recently conducted.

- ◆ Informational videos and literature will be produced and distributed that highlights the Department.

Sterling has a professional caliber video that accomplishes this task with a high degree of quality, but there is no similar tool covering the Department as a County entity. A website is maintained and updated regularly which provides an overview of the Department, a review of the volunteer fire/rescue agencies, and sections devoted to fact sheets, e.g., "Tornado Safety", and public education, including activities for children. The Volunteer Coordinator of the Department has made literature available intended to facilitate local company recruitment efforts. Other materials defining the role and resources of the Department for officers and members of the local volunteer agencies have not been developed as an educational tool. The PEM has not planned or implemented the development of materials that would educate citizens about the Department. Without additional resources (i.e., an additional educator and/or support staff) these activities cannot be accomplished without compromising one or more existing public education programs.

- ◆ All personnel affiliated with the County Fire/EMS and Emergency Management system will be prepared to describe the system to citizens.

The PEM, who brings an appropriate educator focus as the foundation of the PEM's duties, acknowledges the value of having a standardized curriculum to assure that all system participants have a common baseline of knowledge about the system. While it was acknowledged that a logical starting point would be the development of a module for use during EMS and fire courses conducted by the training division, this product cannot be developed with the limited resources at the PEM's disposal at this time.

- ◆ A school program will be in place to assure that every child in the school system has at least three formal courses or interactions in fire, injury, and illness prevention and response programs.

The elementary school environment has been targeted for numerous public education efforts. The PEM has selected third graders as the recipients for the Department's formal fire and safety initiative. This has not been implemented Countywide, however, as principals of individual schools have chosen not to facilitate access of the PEM to their students. Another challenge with this program is some resistance on the part of Department and volunteer personnel to teach the sessions, especially among those who began visiting schoolchildren (including grades other than 3rd) in their own communities before the inception of the Department's public education program. "Fire Plug," a quarterly newsletter written for third graders is cleverly distributed by the PEM through the County schools safety coordinator, who in turn incurs all of the duplication and distribution costs. This publication also includes injury prevention topics, such as information intended to prevent drowning or near drowning. The specific topics are selected based on the risks associated with the season of publication or perceptions about frequency of certain incidents in the County.

- ◆ The respective companies will represent the Department at all County and community functions.

Generally speaking, there is more evidence of resistance than tolerance to this concept; a relationship and atmosphere of trust would be necessary before volunteers would consider themselves as allies to and ambassadors of the Department, and vice versa. The Department's public education program, however, is the best common ground exercised to date where career field personnel, volunteers, and Department staff such as the PEM work harmoniously on a function. For this and other public education programs, the volunteer has the opportunity to perceive the entire County as their "first due" area. When this occurs, such as has been demonstrated through the child passenger safety program, the public perceives a unified, well-coordinated approach.

- ◆ A formal injury prevention, facility inspection, and education program modeled after the fire prevention program will be implemented to reduce injuries in the County.

The attributes of the Department fire prevention program are discussed in a subsequent section. This internal success of this



program should serve as a model for a comparable prevention, inspection and education program that targets injury and the other leading causes of acute onset illnesses which tax the EMS aspect of the Department operations with consistently higher frequency than fires. Inspections of buildings such as schools, playgrounds and commercial structures for the purposes of identifying injury risks and patient access considerations do not occur in concert with or at a rate equal to those to eliminate fire threats. A relationship with the Area Agency on Aging that facilitates participation in the “File for Life” program has resulted in an ingenious collaboration: ancillary personnel who are visiting senior citizen’s homes will check for a functional smoke detector and arrange for one to be installed if necessary; however, no inspection for injury risks (e.g., broken railings or stairs, excessive water heater settings, etc.) are performed. An integrated and strong working relationship has not been established between the fire prevention division and the public education program. Given the Department data about frequency and severity of fire versus EMS response in Loudoun County, an extremely disproportionate allocation of human resources and budget are provided for fire prevention and inspection compared to injury prevention, inspection, and technical assistance.

- ◆ The public education program will be utilized to recruit volunteer personnel.

There has not been an effort to define the public education roles that prospective volunteers who are not willing or able to become emergency responders could play; i.e., becoming a part of public education or outreach activities such as presentations of Department initiatives, e.g., providing fire safety talks to third graders. There is an inconsistency in the PEM’s ability to marshal resources for these critical tasks, indicating the potential value of recruitment for alternate purposes: existing volunteers who are also firefighters or EMS personnel are already devoting a significant amount to time to their local response and company activities, and are often unavailable during weekdays; conversely, the use of career personnel may involve overtime or an unprepared presenter, and directly affects operations for a different Deputy Chief than the one to whom the PEM answers. The present positioning of a Volunteer Coordinator within the Department does not require interaction with the PEM, who could be utilized to provide an educator perspective and the strategic selection of educational methods depending on the subject matter and the audience. Even if the knowledge and skills of an educator were formally incorporated into recruitment materials and programs, the volume of tasks assigned to the PEM would preclude adequate time for development.

- ◆ A strong public education program will be in place to educate citizens and businesses in fire, injury and illness prevention.

The accomplishments of the Department in this area are remarkable, given the youth of the program and the paucity of manpower and resources afforded to the PEM and PIO. Examples include the multidisciplinary and multi-agency child passenger safety inspection



program; collaboration with the Area Agency on Aging for the File for Life Program; the A.F.T.E.R. liaison role for families following significant residential fires; information dissemination through unconventional but critical routes such as the County housing service, daycares, and Head Start programs; and the Safety Minute concept. These are representative of what should be a tremendous source of pride and accomplishment for the Department. Undertakings of volunteer agencies, such as community outreach, the fire-rescue recruitment officers' work, and individual participation in public education activities are equally notable extremes beyond the core emergency response work being performed. There is an apparent imbalance in the degree of resources afforded to the public education program, however, in the face of increasing demands for field personnel being placed on the County. Opportunities to reduce the demand on the system through sound public education planning and implementation have not been formally explored or exhausted. No ratio of increases in numbers of new field personnel positions to increases in public education and injury prevention efforts has been established or filed in budget requests in the two most recent years reviewed. The Department appears to be dependent on the individual skills of the personnel performing the PIO and PEM tasks, without assuring that the infrastructure of the programs that they oversee can outlast the personal capacity those individuals bring to their positions. The lack of active, prospective coordination between the PEM, PIO, Volunteer Coordinator, Emergency Services Coordinator and fire prevention division is contrary to the long-term success of an all-hazard, all-risk public information and education program. Loudoun County specific response and archival data are not used as the basis for an evidence driven public information or public education effort. Selection of topics for some of the newsletter and informational products are done on an anecdotal basis, or as a result of a national "X" week focus. The PEM does not have access to real time or historical response data that would permit accountable deduction of actual risks or threats based on Loudoun County's own idiosyncrasies. The Department proves its accessibility in this area through constant on-call status for the media, and resources to facilitate public education needs tailored for volunteer companies and special interest groups alike on an as-requested basis.

## 2.1.13. FIRE PREVENTION

- ◆ A totally integrated automated inspection and permit program will be in place for all inspections and fire prevention permits.

**There is no integrated automated inspection or permit system in place. Permits are issued through the use of a computer program that utilizes a stand-alone system that does not interface with any other computer system or database. Inspections are maintained via hard copy. Data is not collected or available in regards to activities**

**due to the lack of a computerized system. Requests for information require a manual search of reports and forms.**

- ◆ A standard inspection schedule will be in place that describes the frequency of inspections by type of occupancy.

**There is no set standard for inspections of buildings in the County. Inspections are performed on a complaint basis and then based on certain the type of occupancy. The frequency of the inspections is variable and not based on a scheduled basis. Many buildings in the County have never been inspected. There is no database that lists all buildings that require inspections in the County.**

- ◆ A system will be in place to inform fire prevention personnel of buildings in the plans review process, special occupancy proposals, and occupancy permit approvals.

**The fire prevention section only learns of new buildings if a plan is being reviewed, or upon request for an inspection by the building officials office. The issuance of a certificate of occupancy does not require approval or knowledge of the fire marshals office. There is no formal means to track new construction and to establish a record of the structure for future fire inspections. There is no means to track changes in occupancy or to assure that fire related issues are addressed.**

- ◆ A system will be in place to notify company personnel of upcoming buildings, and of issuance of final certificate of occupancy permits.

**There is no notification process in place for smaller occupancies. Companies often are aware of larger and complex projects, but are not made aware of smaller projects. There is no formal notification of new occupancies or of future impacts on emergency responses made to fire companies. No risk assessment is completed on new occupancies to determine the appropriate emergency response to the facility.**

- ◆ A specially trained juvenile investigator will coordinate the Juvenile Fire Setter prevention program.

**There is no dedicated juvenile fire investigator or program in place for juvenile fire setters. The on duty investigator handles all calls relating to arson including juveniles. There has been a tremendous increase in the number of juvenile related cases over the last year. Due to the high caseload of the investigators, minor cases may go without follow-up due to lack of staffing.**

- ◆ Formal policies will be in place that addresses the law enforcement activities of sworn fire investigators.

**Fire investigators have full police powers and are on duty 24 hours per day. There are no formal policies in place that address the responsibilities of these personnel. Uncertainty is evident in the section and personnel are placed in difficult situations of how to**

**respond to situations that are outside the normal arson investigation realm.**

- ◆ Follow-up investigations will be completed in a timely fashion to assure the continuing high conviction rate.

**Due to the high caseload, some cases are not given adequate follow-up. There is no policy in regards to the amount of time that should be expended for minor cases. There is inadequate clerical support for the section; thus, investigators perform clerical work that takes time away from investigation time. The rapid growth of the County continues to place burdens on fire investigations and the conviction rate may see a corresponding decrease if issues are not addressed.**

- ◆ A fire incident reporting system will be in place and will be mandatory for all incidents.

**There is no County standard fire incident report. There is no automated system through which an investigator can view all incident reports across the County. There is no ability to evaluate incidents across the County and determine if there are arson trends or problems. There is no arson-reporting program that allows investigators to manage their caseload and to interface with other fire protection programs. The lack of a standardized system results in some arson cases never being investigated or identified.**

- ◆ Clerical support will be in place to assure that all documentation is processed in a timely fashion.

**There is inadequate clerical staffing in place to assist with the arson function. Investigators often complete all of their own clerical work. This creates a tremendous problem when interviews need to be transcribed or during complex arson cases.**

- ◆ All fire investigators will have communications equipment that assures their safety while out of their vehicles on emergency responses and investigations.

**There is no standard set of communications equipment for 24-hour fire investigators. There are no portable radios assigned to fire investigators that have police channels. Investigators are often out of contact with the communications center while performing law enforcement activities.**

- ◆ A database will be established that tracks all properties to be inspected and changes in use so as to establish a history of the buildings in Loudoun County.

**There are no databases that are available to the fire marshals office that tracks the history of buildings. Nor, is there a compiled list of buildings to be inspected. There is currently no way to determine exactly how many buildings in Loudoun County should be inspected. When buildings change use groups or occupancy, that fact is not known or tracked. There is no on location that outlines the entire life cycle of any building.**

- ◆ A formal pre-plan process will be in place for all target hazards in the County. The preplans will be developed and updated by the district fire companies.

**There is no pre-plan or company inspection program in place. Some fire companies perform pre-plan walk-throughs and some perform engine company inspections. There is no standard data collection form or standard record keeping mechanism in place. There are no criteria in place for what constitutes a target hazard.**

## 2.1.14. TRAINING

- ◆ Minimum training standards and continuing education requirements will be in place for all Fire, EMS, and Emergency Management personnel in the Department.

**Beyond certain basic training that is mandated for the independent fire agencies there are no consistently applied standards or articulated expectations regarding training, career preparations, or professional development for members of the career or volunteer forces. While the state mandates regarding EMS certification and continuing education are rigidly adhered to there is no “blue ribbon” standard for the fire training and general or continuing education. In many of the fire companies, career and volunteer, talented and energetic individuals have provided excellent training programs. However there is little coordination or quality assurance for any of these.**

**The full integration of career and volunteers and command officers into a “seamless” system wherein each may work for or supervise the other, depending on assignments and professional qualifications and not career or volunteer status will require standardized career development for both career and volunteer members. Close coordination and supervision by senior staff and line officers will be necessary until the process is imbued in the agency membership.**

- ◆ Loudoun County will provide entry level, advancement and maintenance training for all personnel.

**Loudoun County provides entry-level training for career staff and basic training/orientation for volunteers. Further training of volunteers largely depends on uncoordinated firefighter and specialty training that may be offered by individual companies or a consortium of independent fire companies. The shining exception to this is EMS training that follows the state’s curriculum regarding entry and advance training as well as maintenance of medical skills. Throughout the County in career and volunteer positions there is a presumption that once a qualification is earned competency is**

retained for life, as there may be little retesting or other verification of skills.

Little attention is paid to the content and coordination of volunteer training beyond the individual, independent fire companies. There is no generally accepted training schedule or objectives Countywide that would promote sharing/exchange of expertise, skills, materials, and facilities and there is no assurance of quality or consistency in program content or outcomes.

- ◆ The Department will maintain a career development program for all career and volunteer personnel.

After assignment to a company firefighters participate in in-service training on a regular basis to maintain and expand their competencies. However, the station officers have no central training plan to refer to when deciding the in-service training schedule. There is no career development plan in place providing a clear path for advancement within the Department nor a staff and technology development plan. This results in a training effort for the career staff that is competent in providing operational skills, but does not prepare the next generation of fire service officers. There is little planning to alternative program delivery that might utilize available technology to reach more students.

- ◆ A competency based screening program will be developed to determine the length and content of training for new volunteers and employees.

Currently there is little attention to measuring competency or outcomes regarding training and a variety of other matters. Most County measurements are targeting outputs which relate to “things” done, i.e. numbers of inspections, citations, training hours, etc. and do not measure changes in skills, knowledge, or abilities. Starting competency based training programs presumes the County’s ability to describe behaviors and attributes assigned to firefighter, EMS and officer positions. Current training efforts are best described as “package deals” that cover specific subjects. Competency based training will be far more difficult to administer as it requires the training staff to give credit for present knowledge skills and abilities as they provide the learner with new information.

- ◆ The Department will have sufficient training staff to train all volunteer and career personnel on all required and desirable topics.

There appears to be significant differences in the training programs and ultimately the professional competencies of firefighters throughout the County. Some agencies have stringent and demanding training programs that are closely monitored with specific student outcomes and skills identified and achieved. Others are less well planned and executed. Some agencies maintain detailed and comprehensive training documentation while others are less rigorous. However, as a general rule (with a few exceptions) throughout the County, training is often fragmented and without

apparent coordination. Some volunteer fire agency training is done in-service or in-house by the local fire company. Other training is conducted by a coalition of two or more agencies, while yet other training is provided by the Loudoun County Fire Training Division at the local agency, at the fire-training center, and in other available facilities including hospitals and educational occupancies.

A career deputy chief, responsible for training and planning, heads training. Because of dynamic growth issues, planning functions capture the majority of the deputy's time. Below the deputy chief there are captains assigned to run a variety of activities including management of the classroom and drill facility, recruit and EMT training, and in-service and field training for career personnel. The training center captain has two training officers and the facilities maintenance person assigned to him. Other officers may be detailed for temporary duty and off-duty and part-time instructors are used to provide course delivery. The bulk of the field training staff's time is focused on delivery of EMS training, upgrades, and maintenance programs. Part-time instructors do the majority of this training. Fire recruit training is conducted by a captain with two firefighter/instructors and part-time adjuncts.

- ◆ The Department will assure uniformity of minimum training standards for delivery to career and volunteer personnel.

Outside the entry level training for career firefighters Loudoun County provides basic training/orientation for volunteers. Further training of volunteers largely depends on uncoordinated firefighter and specialty training that may be offered by individual companies or a consortium of independent fire companies. There is little evidence of uniformity of training by many of the independent fire agencies with the exception of EMS training that follows the Commonwealth's curriculum regarding entry and advance training as well as maintenance of EMS skills. Throughout the County in career and volunteer positions there is a presumption that once a qualification is earned competency is retained for life, as there may be little retesting or other verification of skills.

- ◆ A formal program will be in place to regularly evaluate competency of personnel and quality of education and resources. This should drive continuing education and future course development and delivery. Personnel should be periodically evaluated by formally trained and experienced fire, EMS supervisors and trainers in all relevant incident/patient and operational functions (i.e., driving, communicating, etc.) as well as firefighting, rescue and EMS competencies

There is no formally adopted process for evaluation of personnel or companies regarding their fire control and suppression mission. This should drive continuing education and future course development and delivery. Personnel should be periodically evaluated by formally trained and experienced fire, EMS supervisors



and trainers in all relevant incident/patient and operational functions (i.e., driving, communicating, etc.) as well as firefighting, rescue and EMS competencies.

- ◆ As assessment will be completed to determine the minimum expectations for entry-level competencies.

There is no evidence of shared understandings or agreements regarding the outcomes for entry-level volunteer trainees. While the Commonwealth provides some guidance for training at various firefighter levels, these are generally unchallenging and often unmet. It is appropriate that a consensus process, well founded in the firefighter professional standards be utilized to establish minimum performance standards.

## 2.1.15. WATER SUPPLY

- ◆ The Department will identify fire protection water demands and shall plan and develop a system to provide for those demands based on defined and specified fire scenarios developed for rural and suburban areas.

The Department and the independent fire companies rely on a variety of sources and systems to provide fire protection water flows. An independent water authority, the Loudoun County Sanitation Authority (LCSA), serves the high population and growth area, comprising the eastern 25-30% of the County's land mass and the majority of the population. The balance is served by a variety of cisterns, separate and independent municipal systems, lakes and ponds with access for, and specially prepared "draft" hydrants. These types of sources mandate County fire agencies provide and staff a large number of tanker trucks in addition to their normal compliment of pumpers, ladder/service companies, and rescue/ambulance companies. The LCSA provides infrastructure sufficient to meet the fire flow requirements in most parts of the urbanized eastern County.

The Department Planning Staff is in the process of identifying and improving water supply points in the rural areas of the County. The County has budgeted \$225,000 in FY 2001 to improve rural water supplies. The project includes establishing drafting sites. The plans provided showed the propagation plan for these drafting points. The plan's implementation will result in the distribution of static water supplies throughout the western and north ends of the County about 6-10 minutes apart. In the planning effort underway there is no evidence that the County or fire agencies have determined their "benchmark" or targeted fire. Neither is there any evidence that the County is determined to move towards alternatives to current fire control methods, thus there is no evidence that future fire protection water demands will not increase with the rapid infusion of structures into the area.



- ◆ System design shall recognize target hazards and occupancies that exceed routine fire flows.

The Department Planning Staff is in the process of identifying and improving water supply points in the rural areas of the County based on analysis to fire potential and impact as well as growth projections. The project includes establishing drafting sites. The plans reviewed showed the propagation plan for these drafting points. The implementation will result in the distribution of static water supplies throughout the western and north ends of the County about 6-10 minutes apart. In the planning effort underway there is no evidence that the County or fire agencies have determined their “benchmark” or targeted fire. Neither is there any evidence that the County is determined to move towards alternatives to current fire control methods, thus there is no evidence that future fire protection water demands will not increase with the rapid infusion of structures into the area.

During recent tests of the Department’s ability to maintain water flows for sustained periods, the agencies were capable to maintain 250-gpm flow. At a later test in 1999, the Department was able to increase their water flows and sustain them at 400 gpm. These tests were conducted with tanks shuttling water over a very short course with prepared turnarounds, sufficient drop tanks were in place, and an adequate number of shuttle, draft, and manifold units were available. In short, these test were performed under near ideal conditions not likely to be duplicated at any “real” fire. Agencies have achieved a high initial fire attack flow that can be successful in controlling a fire. The difficulty in rural fire operations is the effort necessary to maintain a continuous water supply.

- ◆ A minimum system design will consider maximum daily demand and fire flow requirements.

The current system does an adequate and appropriate job for planning water services for fire protection. Currently the LCSA provides for 12 mgd average water use in their area with a 5 million gallon storage capacity. High usage is 20 mgd and the LCSA is guaranteed 27 mgd from its suppliers. The LCSA targets flows of 1750 gpm/ 20-psi residual available in residential areas, with larger flows available in areas zoned for commercial, business, and industrial uses. The LCSA planners also attempt to install “upsized” distribution system components when possible to allow further extension of the system as demands and capacity force growth to the west and north.

System design needs to include water-hauling apparatus. Members representing the volunteer fire agencies as well as the Department were in agreement that there is no standard specification for agency water-hauling vehicles. This difference in water tenders is exacerbated by the lack of standard fittings and equipment and different water delivery practices among some of the fire agencies.

**There is no designated water supply officer provided during major fire emergencies within the Loudoun County systems.**

## 2.1.16. EMERGENCY MANAGEMENT

The integrated emergency management function provided by the Department will include responsibility for the prevention, mitigation, response and recovery to manmade or natural disaster events that require the effective coordination of local, state and federal resources. Specific functions include the administration and coordination of the emergency operations center, development and maintenance of the emergency operations plan, identification and coordination of emergency management information.

A hazards analysis of the County will be performed and updated annually. This enables decision-makers to set priorities and goals for planning and training and to effectively allocate resources on a day-to-day basis and most importantly during a disaster.

**The Emergency Management Program in Loudoun County is a functional division of the Department of Fire and Rescue Services and as such is the official designated agency operating under the authority of the Virginia Department of Emergency Management. The Chairman of the Board of Supervisors serves as the Director of Emergency Management with programmatic responsibility delegated to the Chief of Fire and Rescue Services as the designated Emergency Management Coordinator. A full time Emergency Services Officer functions to administer the program on a day-to-day basis. Operational staffing is limited to the emergency services officer with clerical support provided on an as needed basis from other bureaus and divisions.**

**The Department has an adopted and established emergency operations plan that delineates functional responsibilities and authority during disaster activities. These responsibilities are identified in various annexes contained within the Emergency Operations Plan (EOP). Policies have been developed that define the conditions under which the Emergency Operations Center (EOC) is activated. Generally, these policies define two levels of activation, minimum and maximum. The EOC facility is currently a shared occupancy in which fire and rescue training is also conducted. The center has limited technological support and capability for routine EOC functions and operations. Testing of the EOP is conducted on an annual basis through desktop simulations and full-scale exercises. These activities are specifically designed to test individual plan components as well as the entire plan.**

**Operational activities of the EOC when activated are conducted under the Integrated Emergency Management System. As of July 1<sup>st</sup> in accordance with the agreement of the Metropolitan Washington**

**Council of Governments, all operations requiring the use of incident command are conducted utilizing the Firescope Command System.**

## 2.1.16.1. SPECIALIZED SERVICES

### 2.1.16.1.1. MASS CASUALTY INCIDENTS

A plan will be established with defined responsibilities for each element of a mass casualty incident. At a minimum, the plan will provide for command and control. Included is a coordinated system of medical resources available to effectively provide for the treatment and transportation of patients to appropriate medical facilities. Plans will be reviewed and tested on a periodic basis.

**A mass casualty plan has been developed as part of the agency's emergency management program. The plan identifies the roles of various providers within the community and available resources to effectively respond to an event requiring the use of multiple agencies. The plan is currently being revised to more closely reflect the federal response plans specifically as they relate to Weapons of Mass Destruction and terrorist events.**

### 2.1.16.1.2. HAZARDOUS MATERIALS

A program will be established that provides for an effective response to hazardous materials incidents including recognition and isolation of the event.

**The Hazardous Material program is coordinated through the Haz-Mat Coordinator. In addition to the coordination of the haz-mat program, the position also has specific fire training responsibilities within the Department of Fire and Rescue. Within the role of haz-mat coordinator, the individual serves as the primary contact with the Local Emergency Planning Committee (LEPC) whose responsibilities include identifying strategies to mitigate and or reduce the potential for hazardous material incidents within the community. The LEPC membership primarily consists of industry representatives. Historically, there has been a low occurrence of hazardous material incidents.**

**All personnel including volunteer members have been trained to the First Responder Haz-Mat Awareness Level. The Department also has available a hazardous material response team certified as State Level II Response Team that has the capability to provide on-scene expertise and limited intervention and control. Individual expertise is available within several volunteer companies for specific hazardous material situations. Specialized response teams external to the**

community are available to assist upon special request or regional activation.

A program of facility and hazardous material identification is in place and maintained by the haz-mat coordinator including SARA Title II, III and PIER reports. Material Safety Data Sheets (MSDS) are routinely distributed to first responders and operations personnel for facilities within their first due territory.

#### 2.1.16.1.3. SEARCH AND RESCUE

Capabilities will exist to provide for the search and rescue potentials present within the community.

The Loudoun County Sheriff's Department is functionally charged with the responsibility for searches involving lost and missing persons. Rescue activities required during these events are available and provided for through the Fire and Rescue Department.

Routine rescue capability is available throughout Loudoun County by career and volunteer companies. These efforts are primarily centered on situations requiring the removal of trapped occupants from their vehicles as a result of automobile accidents.

#### 2.1.16.1.4. TERRORISM/WEAPONS OF MASS DESTRUCTION

A plan will be developed that recognizes the role of the emergency services program in the response to a local or regional, actual or threatened terrorist event or release of a weapon of mass destruction.

A response would use the Incident Command System (ICS) and Unified Command, in cooperation with the Federal Bureau of Investigation (FBI) to ensure that all responders and their support assets are coordinated for an effective and efficient response that is necessary to save lives and mitigate property and infrastructure damage.

A terrorism hazard analysis will be performed to identify the vulnerability and risk to sites in the region.

Funding will be sought from Federal granting agencies for personnel training, equipment purchases and pharmaceuticals.

Appropriate plans have been developed that defines the role of Loudoun County in case of a terrorist event. The plan parallels Federal efforts and response to situations of this nature.

## 2.1.16.2. EXTERNAL AGENCY RELATIONSHIPS

Appropriate agreements will be developed that provide for assistance to emergency events from external agencies. These agreements provide for the defined relationships, responsibilities and situations in which external agency assistance is required or provided. Inclusive within the agreements are the reciprocal relationships that may be required. Types of external agency relationships may include:

- ◆ Mutual Aid Agreements – Defined as inter-governmental agreements with neighboring jurisdictions that provide resources when available internal community capabilities have been exhausted.

**Loudoun County utilizes Mutual Aid Agreements to provide for additional resources in the event its own fire and emergency services resources have been completed. These agreements are currently in effect with the following communities: Fairfax County, Dulles International Airport, Prince William County, Fauquier County, Clark County, Jefferson County, Frederick County and Montgomery County. All mutual aid agreements are being reviewed to determine currency, application and consistency between the Department and the various jurisdictions.**

- ◆ Automatic Aid Agreements – Defined as agreements in which response to an emergency event is predicated on closest available resource irrespective of jurisdictional boundaries.

**Loudoun County has developed an automatic aid agreement with Fauquier County for response within Loudoun County. A reciprocal relationship exists for responses within Fauquier County. Likewise the Sterling Volunteer Fire Department has had a longstanding automatic aid agreement with Fairfax County.**

**Automatic Aid agreements are currently being reviewed to determine currency, application and consistency between the Department and the various jurisdictions.**

- ◆ State or Regional Assistance- Specialized functions provided by an external agency to local government that may be required on an individual non-routine basis.

**Loudoun County depends upon and utilizes specialized services in several areas by special request for certain events.**

- Hazardous Materials

**For incidents requiring expertise or capability beyond those that currently exist within the community, the Department has available specialized hazardous material units from Fairfax County and Dulles**

**Airport.** Also available is the state regional hazardous materials response team from Arlington-Alexandria.

- Trench Rescue, Confined Space

**No specialized capability exists within Loudoun County to effectively mitigate incidents of this nature. The Department depends upon the Fairfax County Team for events requiring trench or confined space rescue capability.**

- Urban Search and Rescue

**Urban Search and Rescue Teams are available through the Virginia Department of Emergency Management and the Federal Emergency Management Agency. Specifically, Fairfax County maintains an Urban Search and Rescue Team for large-scale events where building collapse and entrapment requires specialized rescue services.**

- Disaster Medical Assistance Teams

**Medical teams capable of responding to events requiring their activation are available. The Metropolitan Washington Medical Strike Team can be activated under special situations through the County's emergency management program.**

- Response to Terrorism and Weapons of Mass Destruction

**Multiple Federal agencies are available upon request to assist the Department in events involving terrorism and/or Weapons of Mass Destruction.**

- ATF Arson Task Force

**Federal ATF resources are available to the agency for fires of an incendiary nature in which there is loss of life and or property damage exceeding \$1,000,000.**

- ◆ Cooperative agreements that specifically define the relationship between the local agency and those organizations with which the agency routinely interacts including integrated communications capabilities.

- Air Medical

**No specific agreements exist with respect to the utilization of air-medical resources.**

- Hospitals

**No specific agreements exist beyond those established with the local hospital for EMS related activities.**

- Tertiary Care Facilities

1. **No specific agreements exist with respect to the utilization of tertiary care facilities.**



## 2.1.17. INTEGRATION

As the Loudoun County Fire/EMS and Emergency Management system matures it will provide a unique opportunity for system integration. A mature system will have the potential to provide:

- ◆ **More appropriate acute health care management.** For example, as a patient with acute heart attack presents to providers, information could be faxed to the responding ambulance under medical direction for specific pre-hospital management. This might include pre-hospital administration of thrombolytic agents or immediate transport to a facility with cardiac catheterization capability. It might also include pre-hospital medical management through on-line video conferencing with a medical facility for alternate health care decisions.

**The Emergency Medical Service (EMS) system leadership is attuned to the limitations of its service delivery by virtue of county geography and demography. Thus, in certain cases, advances have been made to improve care for specific patients (e.g., those with acute myocardial infarction), providing optimal care sooner. It is not clear that the EMS system is as advanced for many other disease and injury patterns. Moreover, technologic advances that might improve transfer of clinical information or provide decision support have not yet been tested for applicability in Loudoun County.**

- ◆ **Chronic care surveillance.** Long term monitoring of conditions such as hypertension, diabetes and chronic obstructive lung disease could be performed with the goals of more appropriate use of acute hospital facilities and a decrease in preventable emergency responses. Early identification of chronic disease complications could also be accomplished.

**There is currently no ongoing effort to engage in surveillance of chronic conditions in the community. The sorts of collaborative relationships that might be required to facilitate this level of health care delivery by EMS in Loudoun County have not adequately matured. Among these are strategic alliances with the local hospital, health department, and other health care providers in the area. The benefits of focused attempts to monitor chronic conditions within the community are likely to include earlier recognition of deterioration, more expedient access to necessary care, and lower expenditure of health care funds**

- ◆ **Early identification of risk factors.** Early identification could result in more timely intervention from social services, protective services or other agencies.

**As noted in other sections, there has been an extensive investment in fire prevention in Loudoun County. Related activities have included surveying homes for smoke detector placement, for example. While this identifies risk for fire-related morbidity and mortality, opportunities to assess for other injury and illness risk**

factors go unrealized. By responding to emergency calls only after the emergency illness or injury has occurred, as opposed to intervening to identify and attenuate risks before the emergency, the EMS system is missing opportunities to better affect the health of the community.

- ◆ **Surveillance of nuclear, biologic and chemical weapons of mass destruction and terrorism.** Early identification of a sentinel case by EMS personnel is the most sensitive monitor available in the community.

This aspect of emergency preparedness is currently in the forefront across the nation. In Loudoun County, multiple agencies have the opportunity to collaborate to ensure adequate awareness and preparedness for the potential problems related to terrorism. It is not clear that the level of collaboration among Fire, EMS, and law enforcement agencies has yet reached an optimum.

- ◆ **Prevention.** Preventive measures specific to the County could be established. For example, if drug abuse and suicide are determined to be major health care problems in the area, then preventive services could be provided for populations at risk for these problems.

Again, the commitment to fire prevention is out of proportion to that for other injury and illness prevention. Yet, opportunities to engage in other prevention activities surely abound. With the exception of an ongoing collaboration with the Area Agency on Aging, other potential partnerships that include EMS are largely undeveloped. For example, the EMS system is not part of a "Safe Communities" initiative.

- ◆ **Prevention of chronic disease.** Interventions such as vaccination programs for the elderly or other underserved populations could be provided by the mature system.

Attempting to prevent, or attenuate the risk of, chronic disease is a daunting challenge. Yet, the EMS system has many opportunities to provide education and exert its influence in the community to alter unhealthy behaviors. These efforts are probably best made in concert with other health care interests and community groups. In Loudoun County, it is unclear that collaborative partnerships have been created in order to strategically develop programs to attempt to change patterns of chronic disease in the area.

